

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1-37. (Cancelled)

38. (Currently Amended) A method for detecting the presence of micromolar amounts of ~~[[a]]~~ ~~toxicant~~metal ions in an ~~aquatic, terrestrial, gaseous or industrial~~ environmental sample, ~~wherein the toxicant is a metal ion~~, said method comprising obtaining an aquatic, terrestrial, gaseous or industrial environmental sample; contacting said sample putatively containing said ~~toxicant~~metal ions with a nucleic acid molecule intercalated with a fluorescent dye; and screening for dissociation of binding between said nucleic acid molecule and said dye, wherein said dissociation of binding is indicative of the presence of ~~said toxicant~~ micromolar amounts of said metal ions.

39-41. (Cancelled)

42. (Currently Amended) A method according to Claim 38, wherein the metal ~~ion is a~~ions are heavy metal ~~ion~~ions.

43. (Previously Presented) A method according to Claim 38, wherein said fluorescent dye is selected from the group consisting of acridine orange and ethidium bromide.

44. (Previously Presented) A method according to Claim 46, wherein said substrate comprises glass, polystyrene, polymethacrylate, cellulose, nylon, polyvinylchloride or polypropylene.

45. (Previously Presented) A method according to Claim 44 wherein said substrate is polystyrene or polymethacrylate.

46. (Previously Presented) A method according to Claim 38, wherein said nucleic acid molecule is immobilized to a substrate.

47. (Currently Amended) A method for detecting the presence of ~~a toxicant comprising a metal ion~~ ions at toxic levels in an ~~aquatic, terrestrial, gaseous or industrial~~ environmental sample, said method comprising obtaining an aquatic, terrestrial, gaseous or industrial environmental sample; contacting said sample putatively containing said ~~toxicant~~ metal ions with a nucleic acid molecule intercalated with a fluorescent dye; and screening for dissociation of binding between said nucleic acid molecule and said dye, wherein said dissociation of binding is indicative of the presence of ~~said toxicant~~ said metal ions at toxic levels.